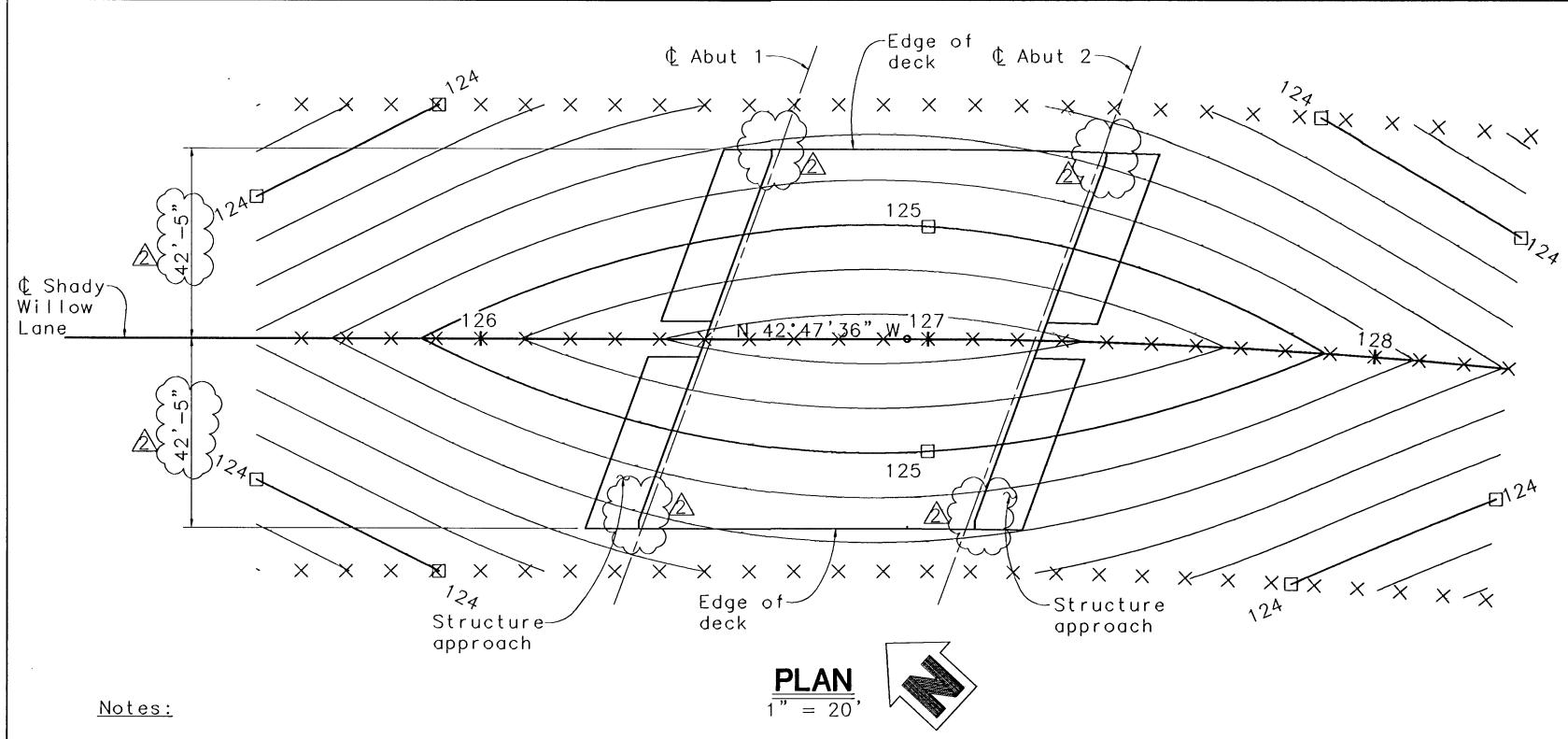
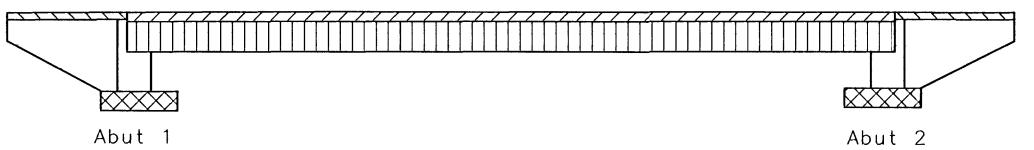


Ac Built 3/28/01



- 1. Contours indicate top of deck elevation.
- 2. □ Indicates even foot contours.
- 3. × Indicates 10' intervals measured along & Shady Willow Lane.
- 4. Contour interval = 0.20'
- 5. Contours do not include camber.



PC/PS Concrete Girder. see 'Prestressing Notes' on 'PC/PS GIRDER DETAILS No. 1' sheet

Structural Concrete, Bridge Footing (Class A Concrete)

Structural Concrete, Bridge (f'c = 3500 PSI @ 28 days)

Structural Concrete, Approach Slab (f'c = 4000 PSI @ 28 days)

CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE

GENERAL NOTES LOAD FACTOR DESIGN

Bridge Design Specifications (1996 AASHTO with DESIGN:

interims and revisions by Caltrans). SEISMIC DESIGN: Caltrans Seismic Design Ćriteria (ŚDC),

Version 1.2 December 2001.

Includes 35 psf for future wearing surface. DEAD LOAD:

LIVE LOADING: HS20-44 and alternative and permit design load.

fy = 60,000 psiREINFORCED CONCRETE:

f'c = 3,500 psin = 9

Transverse deck slabs (working stress design)

fs = 20,000 psifc = 1200 psi

n = 10

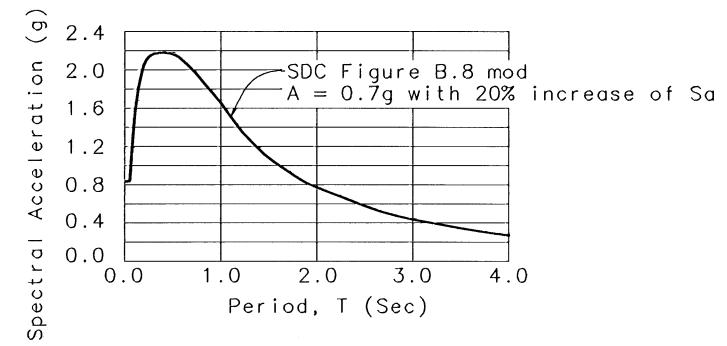
PRECAST / PRESTRESSED

CONCRETE: SEISMIC LOADING: See 'Prestressing Notes' on 'PC/PS GIRDER DETAILS No. 1' sheet

SDC 1.2 Figure B.8 ARS Curve Soil Profile Type D, (Magnitude = 7.25 ± 0.25)

Peak Rock Acceleration = 0.7g with the following modification: 20% increase of spectral accelleration (Sa) for all periods

SITE SPECIFIC ACCELERATION RESPONSE SPECTRA CURVE



In accordance with the Geotechnical report prepared by Kleinfelder, dated February 21, 2003. Copies of the Geotechnical report are available for review at the office of the Soils Engineer.

SPECIAL INSPECTION: The Owner shall employ a Special Inspector during

construction of all phases of the bridge, as specified in the 'Structural Specifications' and State of California

Department of Transportation Standard Specifications

dated July 1992.

CALTRANS STANDARD PLANS DATED JULY 1992

A10A ABBREVIATIONS

A10B SYMBOLS

Appropriately where the second second

LIMITS OF PAYMENT FOR EXCAVATION AND A62C

BACKFILL BRIDGE BRIDGE DETAILS B0-1 BRIDGE DETAILS B0 - 3

B0-5 BRIDGE DETAILS BRIDGE DETAILS B0 - 13

B2 - 5PILE DETAILS-CLASS 45 AND CLASS 70

UTILITY OPENINGS T BEAM B6-10

B6-21 JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")

B11-51 TUBULAR HAND RAILING

B11-54 CONCRETE BARRIER TYPE 26

NO CHANGES

RECORD DRAWING Relley 3/28/07

> **S-2** SHEETS DRAWNG NO. 2002300-2

SHEET NUMBER

AD

SH,

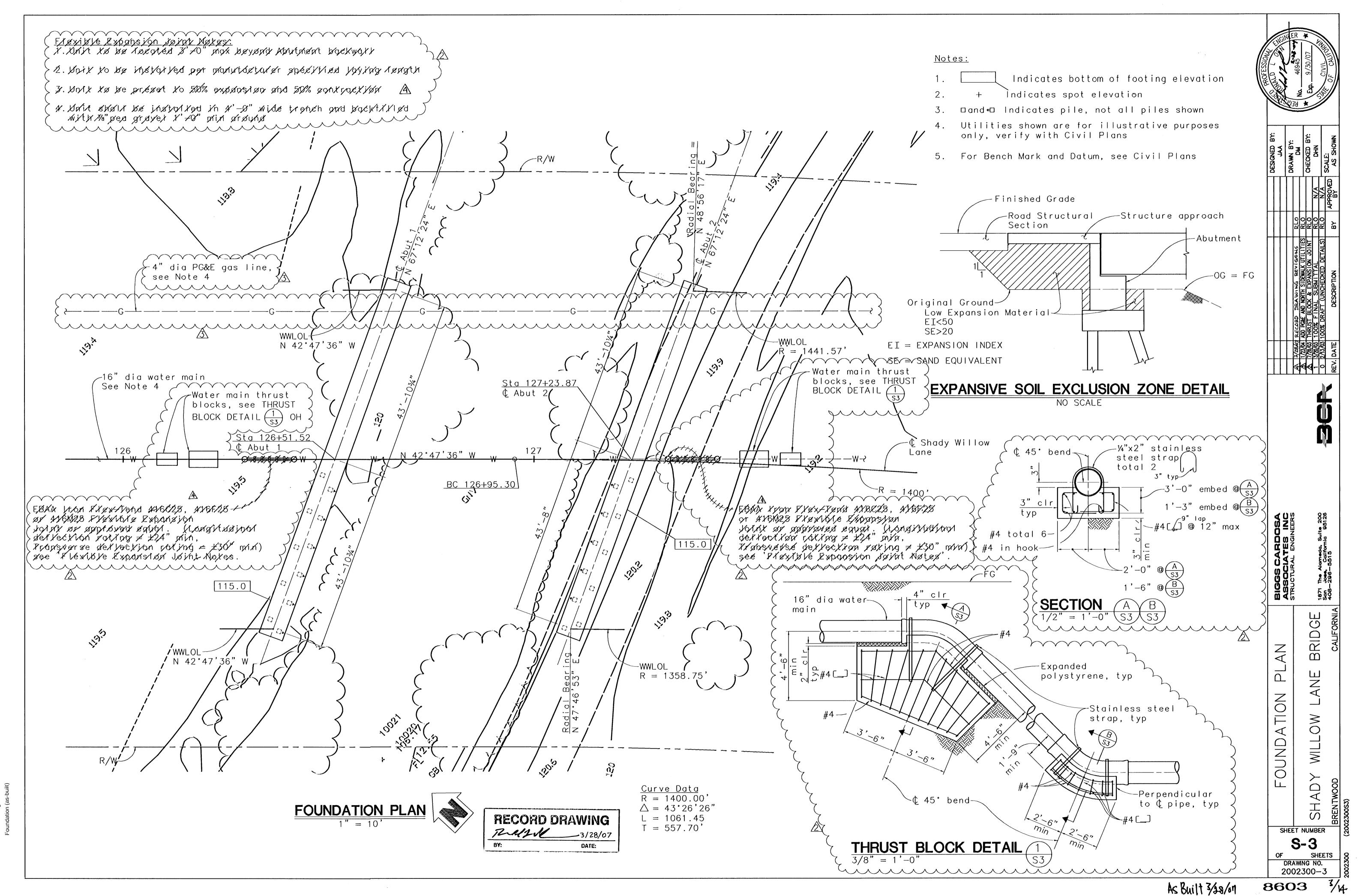
8603

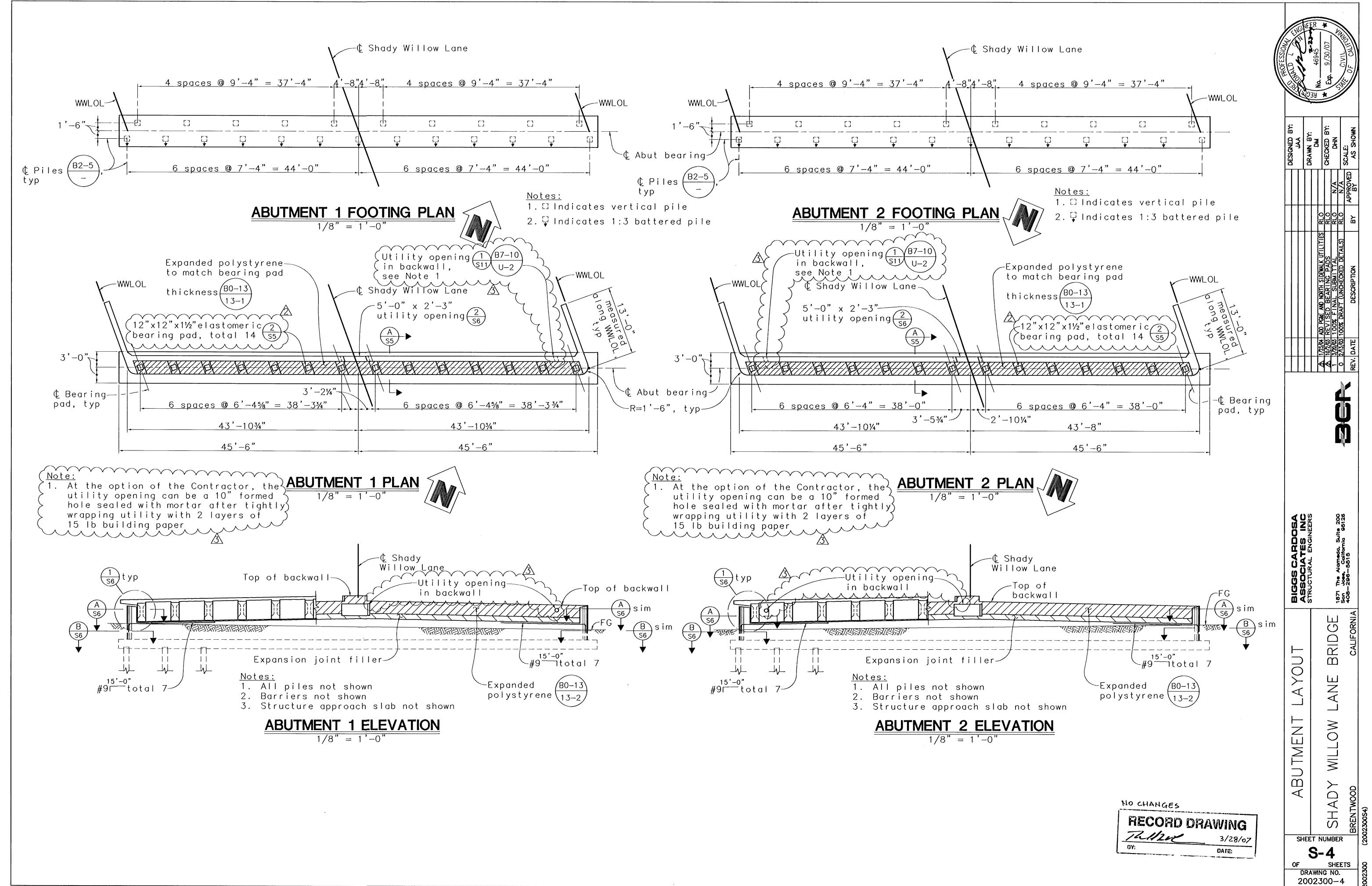
BIGGS CARDOSA ASSOCIATES INC STRUCTURAL ENGINEERS

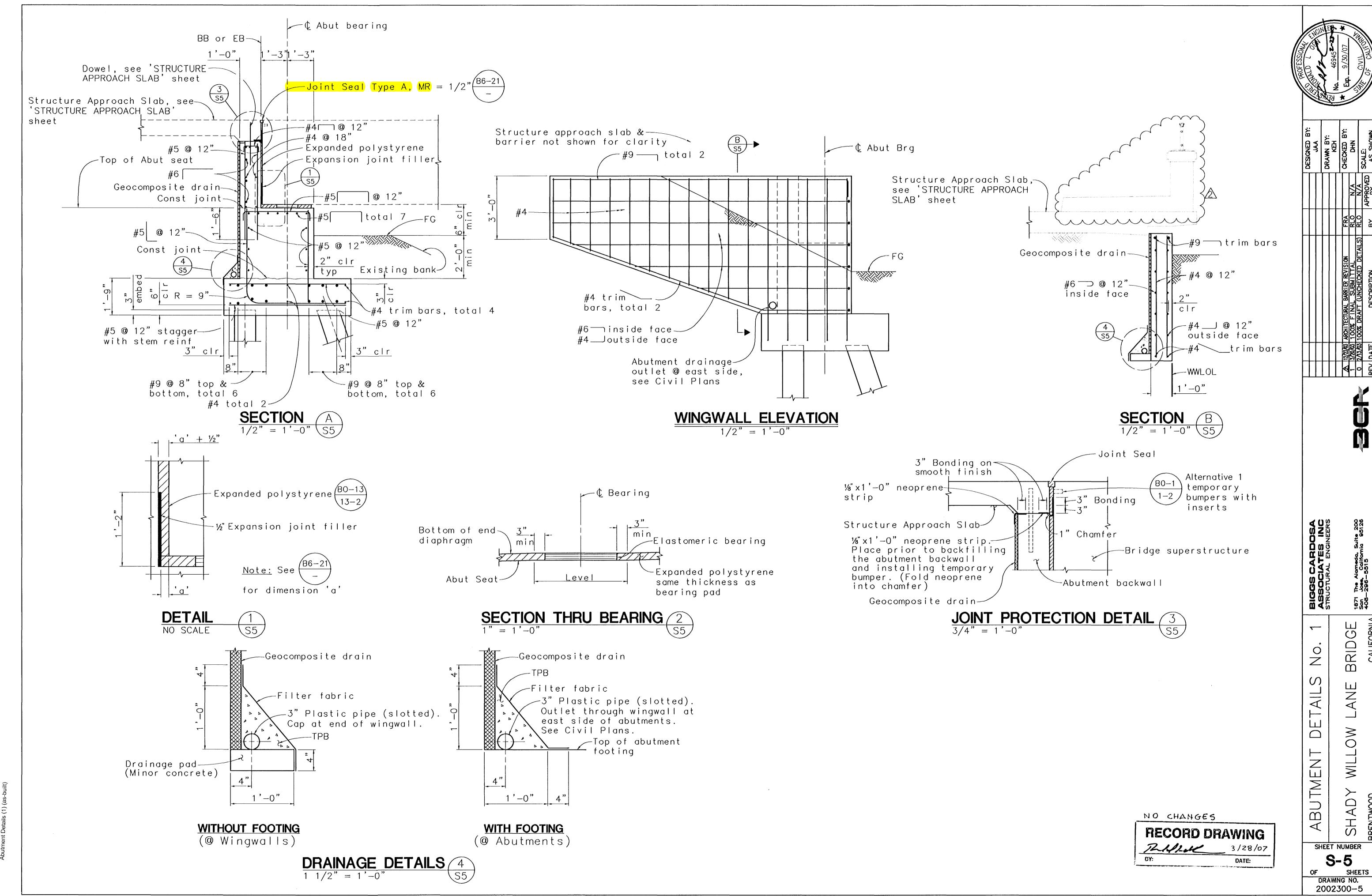
CONTOUR

GE

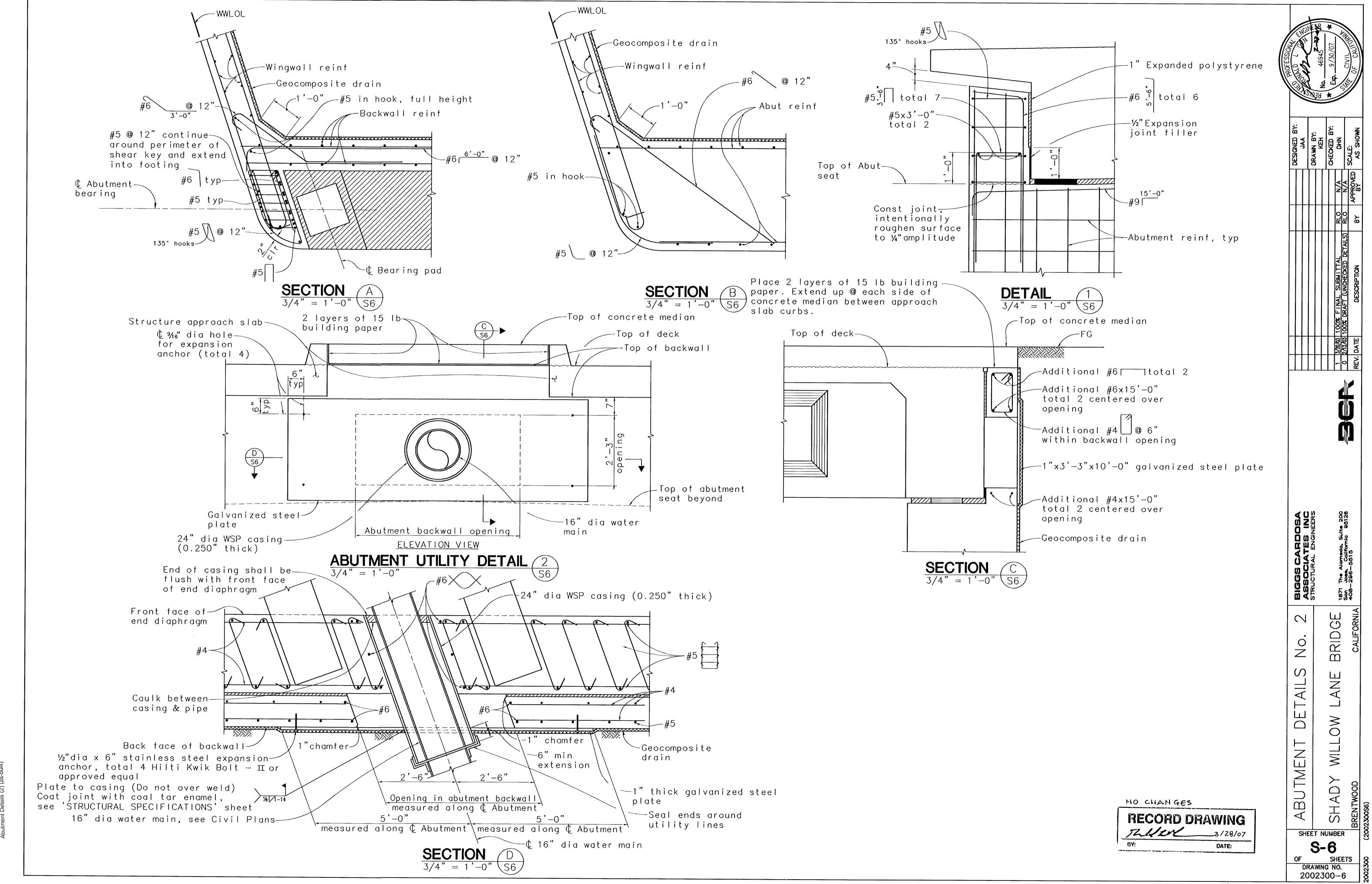
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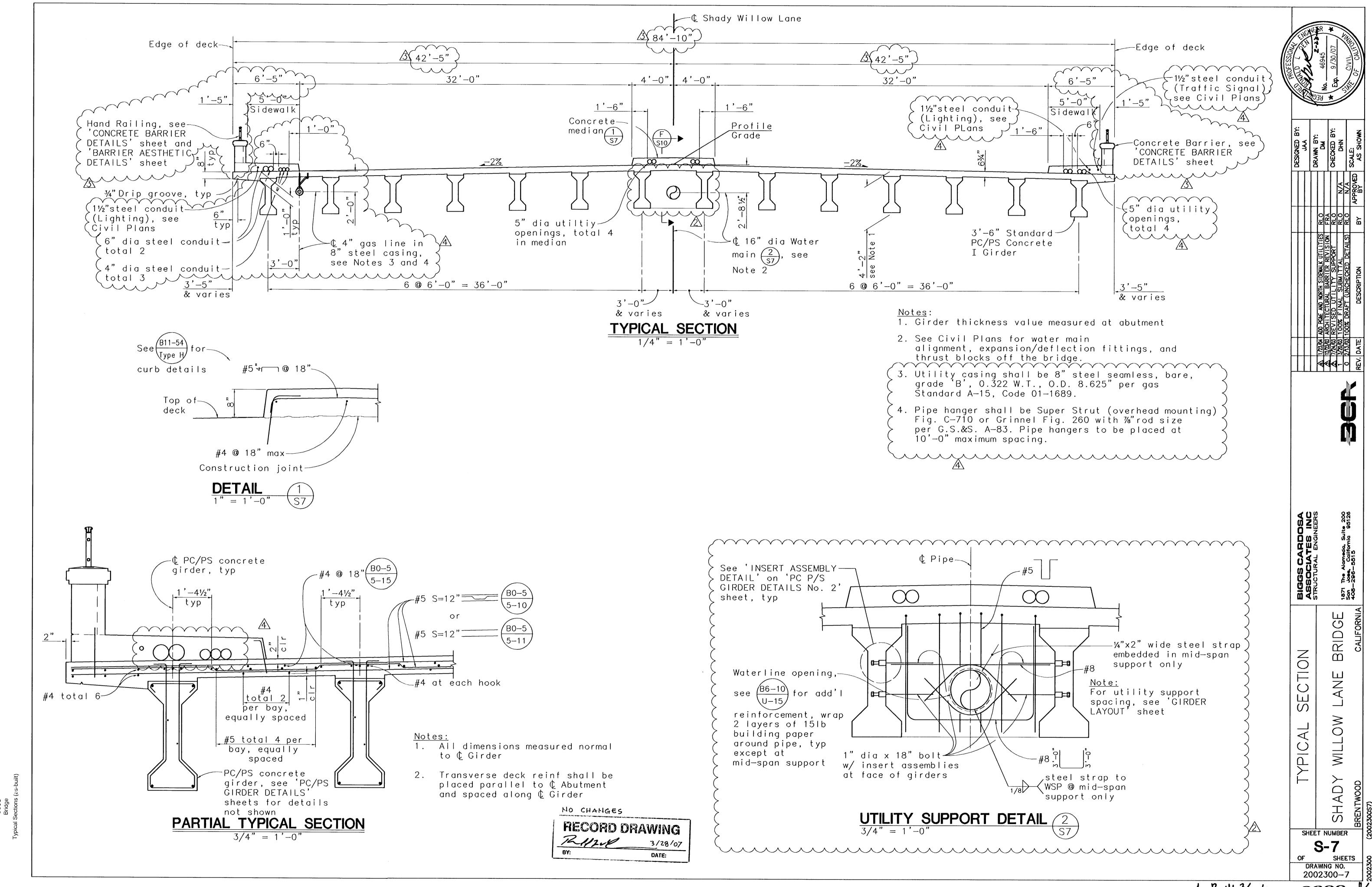




8603
Bridge
tment Details (1) (25 km://)

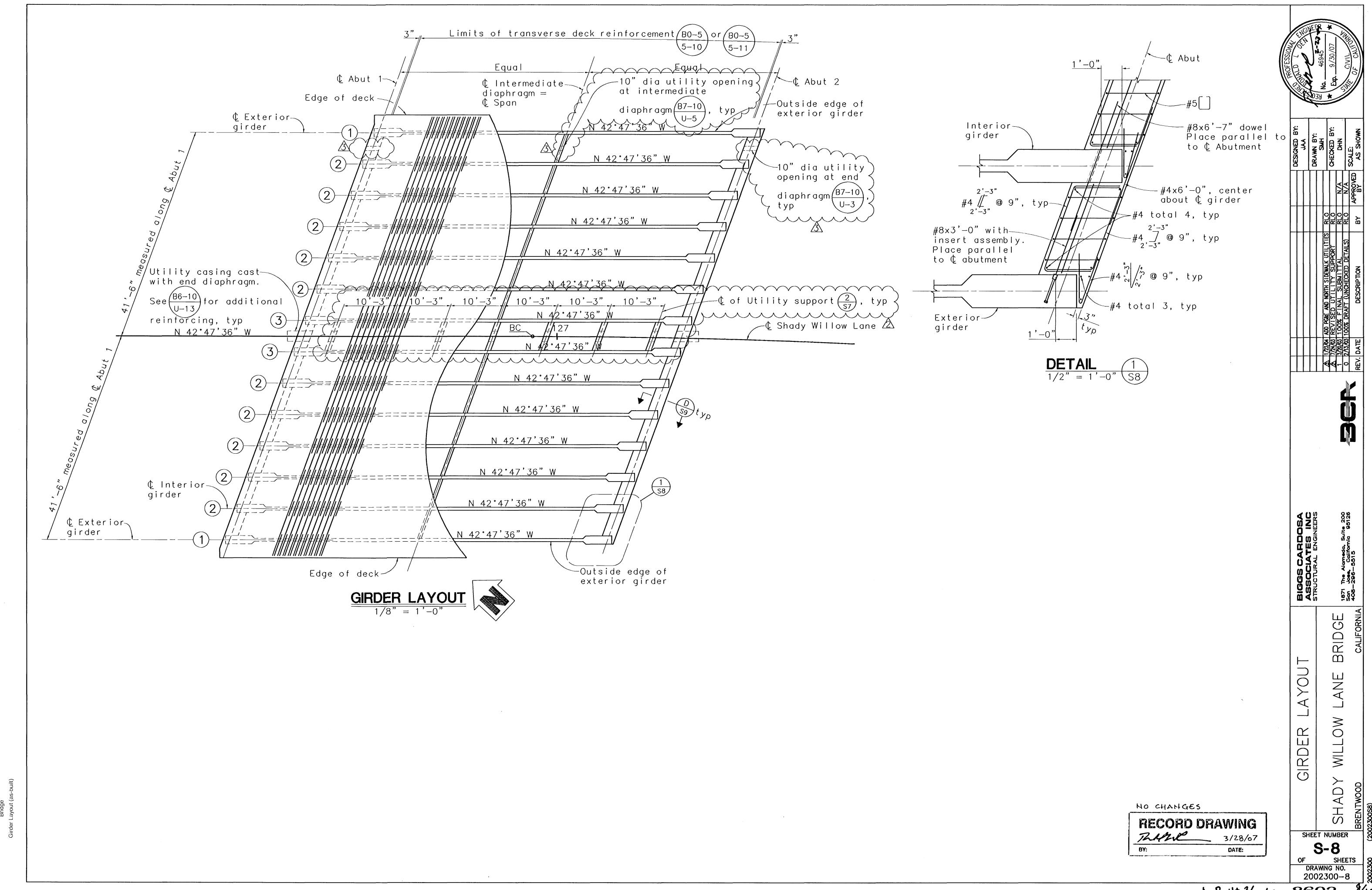


As Built 3/28/09

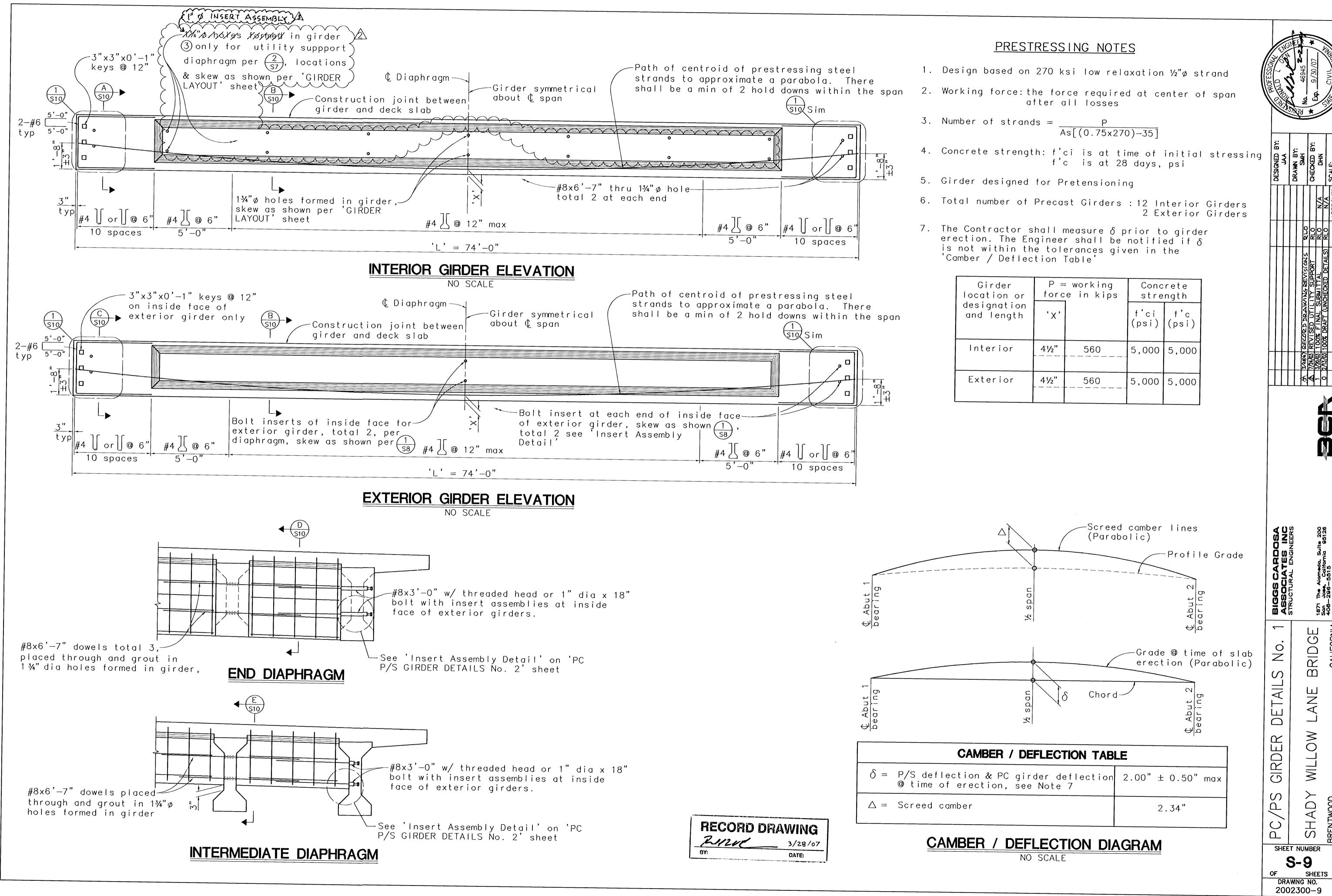


As Built 3/28/M

8603 1/14



As Built 3/28/01



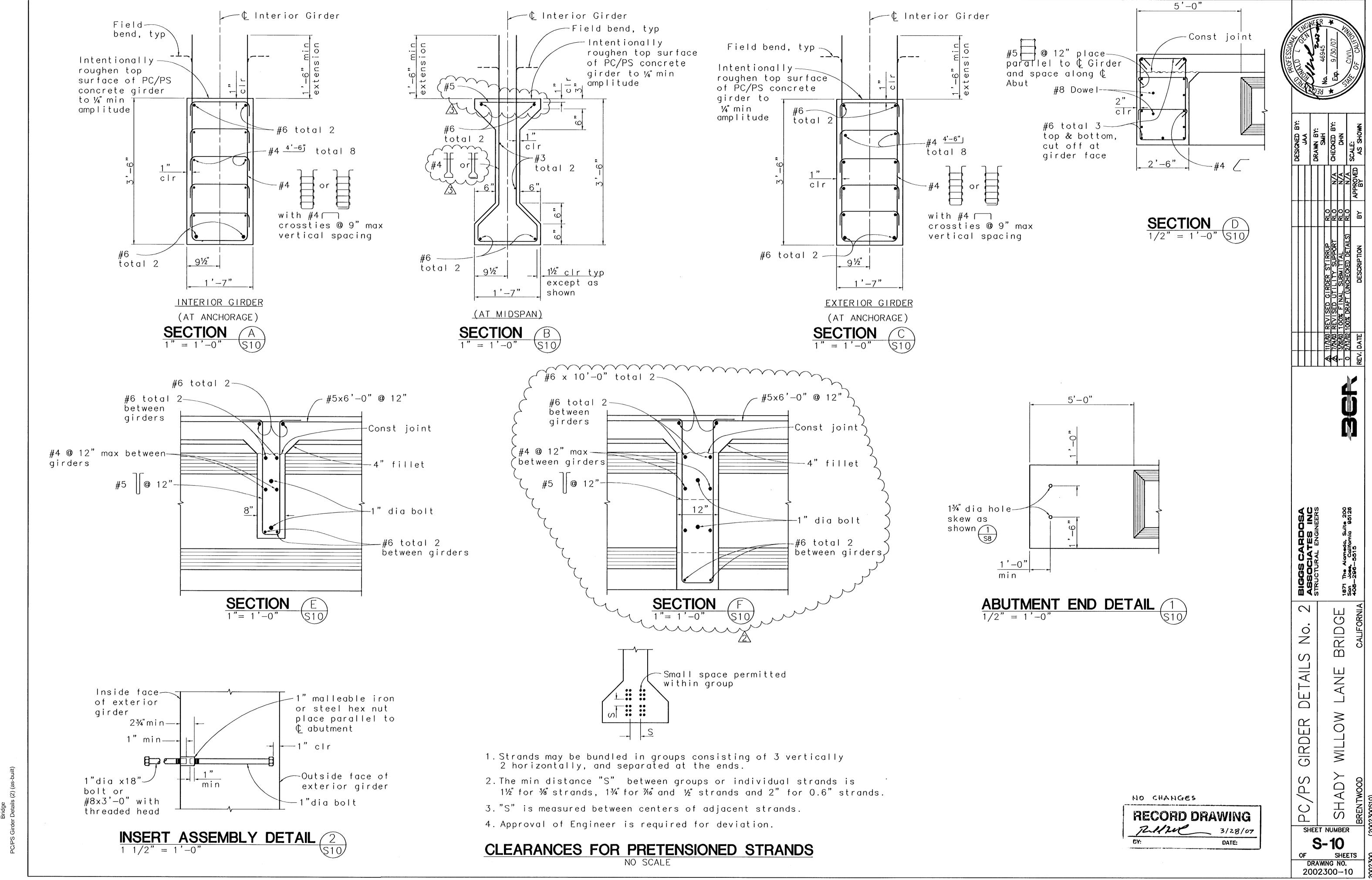
BRIDGE

NA

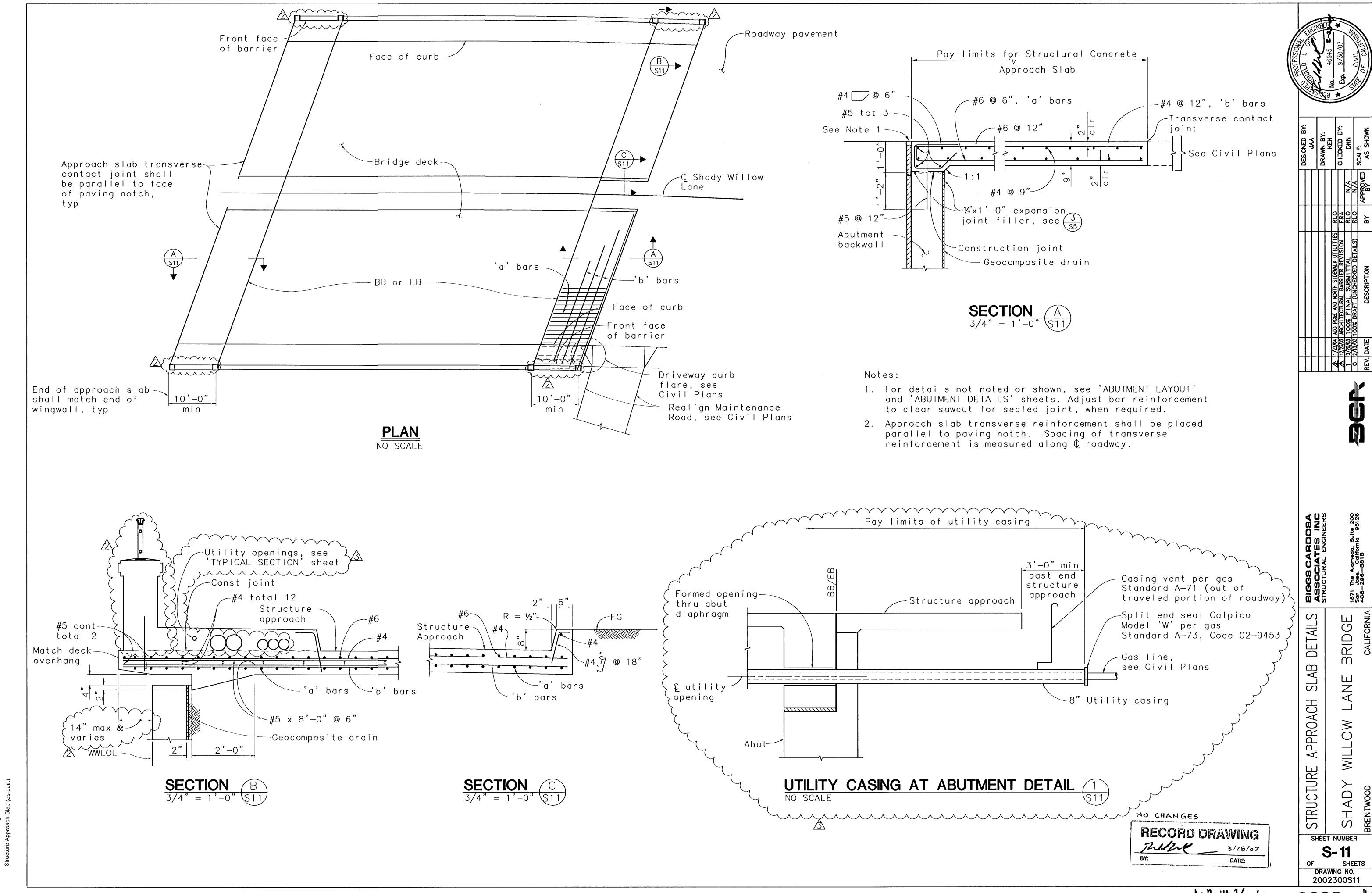
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S-9



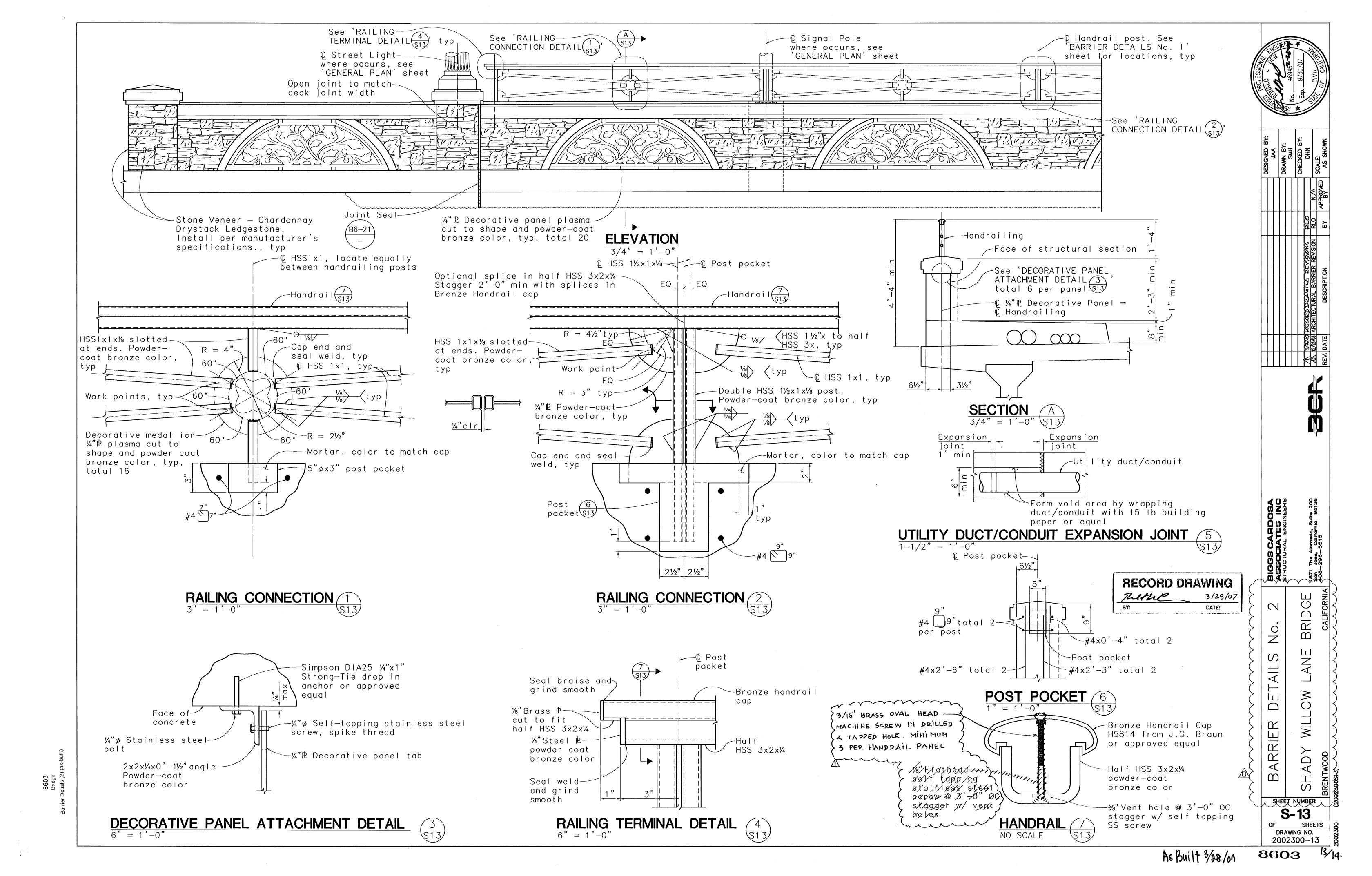
As Built 3/28/on



As Built 3/28/on

As Built 3/18/on

8603 1/4



The work embraced herein shall be done in accordance with the State of California 1992 Standard Specifications and Standard Plans insofar as the same may apply and in accordance with the following special provisions.

Construction inspection of all bridge construction operations and materials testing shall be provided by the Engineer.

Where applicable, if a reference is made in these special provisions or the Standard Specifications to the "Department", the reference shall mean the Engineer.

Where applicable, if a reference is made in these special provisions or the Standard Specifications to the "State," the reference shall mean the owner.

When a reference is made in these special provisions or the Standard Specifications to the "Laboratory", the reference shall mean the established laboratory of the Materials and Research Department of the Department of Transportation of the State of California, or laboratories authorized by the Engineer to test materials and work involved in the contract.

In case of conflict between the Standard Specifications and these special provisions, the special provisions shall take precedence over and be used in lieu of such conflicting portions.

<u>Mobilization</u>

Mobilization shall conform to the provisions in Section 11, "Mobilization," of the Standard Specification and these special provisions.

The contractor will not be allowed any progress payments for Mobilization until all concrete mix designs have been submitted for concrete specified by compression strength, including all required prequalification data specified in Section 90-9, "Compressive Strength," of the Standard Specifications. This includes the submission of acceptable certified test data or acceptable trial batch test reports for all concrete designated by compressive strength proposed for use on the project.

<u>Materials</u>

Engineering Fabric

Engineering fabrics shall conform to the provisions in Section 88, "Engineering Fabrics," of the Standard Specifications and these special provisions.

Filter fabric for this project shall be ultraviolet (UV) ray protected. The requirement that ultraviolet (UV) treated fabrics be submitted to the California Department of Transportation Laboratory at least 45 days prior to use shall not apply.

Concrete

Concrete shall conform to the provisions in Section 90, "Portland Cement Concrete," of the Standard Specifications and these special provisions.

Concrete shall have the minimum compressive strength shown on the 'CONCRETE STRENGTH & TYPE LIMITS' diagram of the project plans, and shall be considered to be designated by compressive strength.

The amount of free water used in concrete for roadway deck slabs of highway bridges and structure approach slabs shall not exceed 305 pounds per cubic yard, plus 20 pounds for each required 100 pounds of cement in excess of 658 pounds per cubic yard.

The temperature of mixed concrete for roadway deck slabs of highway bridges, immediately before placing, shall be not less than 50° F. nor more than 80° F. Aggregates and water shall be heated or cooled as necessary to produce concrete within these temperature limits. Neither aggregates nor mixing water shall be heated to exceed 150° F. If ice is used to cool the concrete, discharge of the mixer will not be permitted until all ice is melted.

Earthwork

the Geotechnical Engineer.

Earthwork shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications the Geotechnical Report prepared by Kleinfelder, dated February 21, 2003, and these special provisions. Copies of the Geotechnical Report are available for review at the office of

Only low expansion soil material shall be placed as part of the embankment within the limits of low expansion material shown on the plans for the full width of the embankment. Low expansion material shall have an Expansion Index (EI) less than 50 measured in accordance with ASTM Designation 4829 or a Sand Equivalent (SE) greater than 20 measured in

The difference in level of backfill behind abutments shall not exceed 2 feet.

accordance with California Test Method 217.

Piling shall conform to the provisions in Section 49, "Piling," of the Standard Specifications, the Geotechnical Report by Kleinfelder dated February 21, 2003, and these special provisions.

All pile driving shall be performed under the continuous observation of the Geotechnical Engineer, who shall be notified 48 hours prior to pile driving.

Pile tip elevations shall not be revised without the written approval of the Geotechnical Engineer.

Vibratory hammers shall not be used.

Piles shall be driven in oversized drilled holes in conformance with the provisions in Section 49-1.06, "Predrilled Holes", of the Standard Specifications at the locations and to the corresponding bottom of hole elevations listed in the following table:

Bridge Name			
Bridge Name	Abutment Number	Bent Number	Elevation of Bottom of Hole
Shady Willow Lane Bridge	1	-	105 ft
Shady Willow Lane Bridge	2	_	105 ft

Prestressing Concrete

Prestressing concrete shall conform to the provisions in Section 50. "Prestressing Concrete," of the Standard Specifications and these special provisions.

All prestressing operations shall be performed under the continuous inspection of the Structural Engineer.

Concrete Structures

Portland cement concrete structures shall conform to the provisions in Section 51, "Concrete Structures," of the Standard Specifications and these special provisions.

On structures, the Contractor will be responsible for setting deck elevation control points to establish the grade and cross-section of the concrete deck surface, including all camber allowances.

Form panels for exposed surfaces shall be plywood conforming to or exceeding the requirements of U.S. Product Standard PS 1 for Exterior B-B (Concrete Form) Class I Plywood or any material which will produce a smooth uniform concrete surface substantially equal to that which would result from the use of such plywood.

Falsework

Falsework shall be designed and constructed in conformance with the requirements in Section 51-1.06, "Falsework," of the Standard Specifications and the latest edition of the State of California Department of Transportation Falsework

Elastomeric Bearing Pads

Elastomeric bearing pads shall conform to the provisions in Section 51-1.12H, "Elastomeric Bearing Pads," of the Standard Specifications and these special provisions.

Pads shall be available for sampling at least 4 weeks in advance of intended use. All sample pads for testing shall be furnished by the Contractor at his expense.

One sample bearing shall be furnished to the Engineer from each lot of bearings to be furnished for the contract. Samples shall be available at least 3 weeks in advance of intended use.

Structure Approach Slabs

Structure approach slabs shall be constructed in accordance with the provisions in Section 51, "Concrete Structures," of the Standard Specifications and these special provisions.

Geocomposite drain shall consist of a manufactured core not less than 0.25-inch thick nor more than 2 inches thick with one or both sides covered with a layer of filter fabric that will provide a drainage void. The drain shall produce a flow rate, through the drainage void, of at least 2.0 gallons per minute per foot width at a hydraulic gradient of 1.0 and a minimum externally applied pressure of 3,500 pounds per square foot.

Plastic pipe shall conform to the provisions for pipe for edge drains and edge drain outlets in Section 68-3, "Edge Drains," of the Standard Specifications.

Treated permeable base shall shall consist of constructing a cement treated permeable base in accordance with Section 29, "Treated Permeable Bases," of the Standard Specifications and the following special provisions:

Cement treated permeable material shall be compacted with either a vibrating shoe type compactor or with a steel-drum roller weighing not less than 1 1/2 tons nor more than 5 tons. Compaction shall follow within one-half hour after the spreading operation and shall consist of 2 complete coverages of the treated material.

Concrete for use in approach slabs shall contain not less than 658 pounds of cement per cubic yard.

Building paper shall be commercial quality 30-pound felt. The top surface of approach slabs shall be finished in conformance with the provisions in Section 51-1.17, "Finishing Bridge Decks," of the Standard

Specifications. Edges of slabs shall be edger finished.

Joints in concrete bridge decks and joints between concrete structures and concrete approach slabs shall be sealed in conformance with the details shown on the plans, the provisions in Section 51, "Concrete Structures," of the Standard Specifications and these special provisions.

Reinforcing Steel

Reinforcement shall conform to the provisions in Section 52, "Reinforcement," of the Standard Specifications and these special provisions.

Reinforcing bars shall be low-alloy steel deformed bars conforming to the specifications of ASTM Designation: A 706/A 706M

Wire used as reinforcement in structures and concrete piles, conforming to the specifications of ASTM Designation: A 82.

Unless otherwise shown, splices in adjacent reinforcing bars at any particular section shall be staggered. The minimum distance between staggered lap splices or mechanical lap splices shall be the same length required for a lapped splice in the largest bar. The minimum distance between staggered butt splices shall be 2 feet. Completed butt splices shall develop a minimum tensile strength of 80,000 psi for ASTM Designation: A 706/A 706M bars.

Butt Welded Splices will not be allowed, except for shop-produced complete joint penetration butt welds or resistance butt welds produced by a fabricator approved by the California Department of Transportation Laboratory.

Mechanical Butt Splices shall conform to the requirements of Section 52—1.08C, "Mechanical Butt Splices," of the Standard (Specifications and these special provisions.

A minimum of 3 weeks prior using mechanical butt splices, the Contractor shall submit to the Engineer manufacturer documentation and certificates of compliance for any proposed mechanical butt splices. Only mechanical butt splices that have been approved by the California Department of Transportation Laboratory will be allowed.

Utility Conduits, Ducts and Casings

Casings shall be installed through each abutment as shown on the plans.

Working drawings for temporary support of casing pipe at the abutments shall be submitted for approval.

Welded steel pipe casing shall be welded steel pipe conforming to Section 70-1.02B, "Welded Steel Pipe," of the Standard Specifications, except that the exterior surfaces of welded steel pipe shall be cleaned and coated in accordance with specifications of ANSI/AWWA C213 or cleaned, primed, and coated in accordance with specifications of ANSI/AWWA C214.

Galvanized steel cover plate around the welded steel pipe casing at the abutment backwall as shown in the plans shall conform to the provisions for miscellaneous bridge metal in Section 75, "Miscellaneous Metal", of the Standard Specification and these Special Provisions. The exterior surface of the WSP casing to cover plate joint shall be cleaned, primed and seal coated with coal tar enamel in accordance with the requirements in AWWA Designation: C203.

Wrapping tapes for pipe in contact with the ground shall be a pressure sensitive polyvinyl chloride or polyethylene tape having thickness of 50 mils, minimum.

All anchor bolts, pipe clamps, nuts and bolts, and other fittings shall be suitable for the type and size of the conduit, duct or casing and conform to the provisions in Section 75-1.03, "Miscellaneous Bridge Metal," of the State Standard Specifications.

Epoxy adhesive shall conform to the provisions in Section 95-1, "General," of the Standard Specifications.

Openings for utilities through bridge superstructure concrete shall either be formed or shall consist of pipe sleeves.

Damaged coating on steel pipe casing in contact with earth shall be repaired to the satisfaction of the Engineer.

The Contractor shall furnish and install the 16" water main and coordinate with the City of Brentwood.

The Contractor shall verify pipe, pipe fittings, thrust blocks anchors, and hanger requirements with the Civil PLans.

Miscellaneous Metal (Bridge) shall conform to the provisions for Miscellaneous Bridge Metal in Section 75, "Miscellaneous Metal," of the Standard Specifications and these special provisions.

Self-tapping screws shall be hex-head, stainless steel or monel metal, installed in holes drilled to fit the self-tapping screws.

All metal parts of anchorage devices, except mechanical expansion anchors, iron castings for cast-in-place inserts, and surfaces receiving field welds shall be hot-dip or mechanically galvanized.

Mechanical expansion anchors may be hot-dip or mechanically galvanized, made from stainless steel, or coated with electrodeposited zinc conforming to the requirements of ASTM Designation: B 633. Iron castings shall be mechanically galvanized.

"Railings" of the Standard Specifications, and the manufacturers specifications for the bronze handrail cap.

Structural Steel shall conform to the provisions in Section 55 provisions. ullet "STEEL STRUCTURES" of the Standard Specifications and these ullet

Handrail shall conform to the provisions in Section 83-1,

Concrete Barrier

Concrete barriers shall conform to the provisions in Section 83-2, "Barriers," of the Standard Specifications and these special provisions.

The minimum 28-day compressive strength for concrete used in barriers shall be 3,500 pounds per square inch, and the barrier concrete shall be considered to be designated by compressive strength.

[⊥] Mortar

Mortar shall conform to the provisions in Section 51-1.135 "MORTAR", of the Standard Specifications and these special provisions.

Concrete Pigment

Pigment for colored concrete and colored mortar shall be QC Colortech CC54, BUCKSKIN color or approved equal and shal be used per manufacturer's specifications.

Plasma-Cut Steel Plate

Artwork patterns for plasma-cut steel plate panels in barrier and plasma-cut steel plate medallions in handrail will be available to the Contractor upon request. Patterns will be provided as electronic bit-map image files. The contractor shall submit a request to the Engineer for these files at least 5 days in advance to the date of their intended use.

Powder Coating

Powder coating shall conform to the provisions in USPS-P-1170A **< Concrete Structures** dated January 28, 1991, the United States Postal Service Specification for Dry Powder Coating. Powder coating color shall be Obrien PFJ-407-A5, "Statuary Bronze", or approved equal. Samples showing required color and finish of powder coated surfaces will be made available to the Contractor upon request. The Contractor shall submit a request to the Engineer for these samples at least 10 days in advance to the date of their intended use.

WORKING DRAWINGS

In addition to other submittal requirements specified in the Standard Specifications or these special provisions, the Contractor shall submit to Biggs Cardosa Associates, Inc. for their review working drawings for the following items:

- 2. Prestressing / Precast girders 3. Concrete mix design
- 4. Falsework
- 5. Reinforcing steel
- 6. Hand railing 7. Utility hangers & casings

Unless otherwise specified in the Standard Specifications of these special provisions, the Contractor shall submit three sets of prints for review. Fabrication shall not proceed until shop drawings have been reviewed by Biggs Cardosa

STRUCTURAL OBSERVATION

Associates, Inc.

In addition to other bridge inspection requirements specified in the Standard Specifications or these special provisions, Biggs Cardosa Associates, Inc. shall be notified with a minimum of 24-hour advance notice to perform structural observation of the following major construction milestones:

- 1. Footings reinforcement before concrete pour
- 2. Abutment reinforcement before concrete pour 3. Precast girder reinforcement before concrete pour
- 4. Prestressing layout
- 5. Deck reinforcement before concrete pour 6. Final walk-through at project completion

Construction at each major milestone as defined above shall not proceed until Biggs Cardosa Associates, Inc. has performed the required structural observations.

Should Biggs Cardosa Associates, Inc. be also retained to provide the bridge inspections, as required by the Standard Specifications and these special provisions, these structural observation requirements will be considered as having been met by the corresponding bridge inspections performed by Biggs Cardosa Associates, Inc.

CONSTRUCTION LIABILITY

Contractor agrees that in accordance with generally accepted construction practices, Contractor will be required to assume sole and complete responsibility for the job site conditions during the course of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to working hours, and Contractor further agrees to defend, indemnify and hold Design Professional harmless from any and all liability real or alleged in connection with the performance of work on this project excepting liability arising from the sole negligence of Design Professional.

DESIGN LIABILITY

These plans were prepared with the understanding that Biggs Cardosa Associates, Inc. is retained during construction for Working Drawings review, clarification of contract documents and Structural Observation of major construction milestones, as defined elsewhere in these special provisions.

BRIDGE INSPECTIONS

The owner shall employ a Bridge Inspector during construction on the following types of work:

Prepare daily pile driving logs containing the following information:

- Number of the pile (location shown on plan)
- Top elevation of pile
- Depth of pile (cut-off elevation to pile tip) - Number of blows for each foot of penetration for the entire pile length

Prestressing Concrete

) elongation at rupture.

/force for every tenth tendon

- Verify that prestressing steel mill certicates show prestressing steel in compliance with special provisions. - Take an eight foot long sample from each reel of prestressing strand and a minimum of one set of anchorage devices from each lot received by the Fabricator - Test each sample of prestressing strand for ultimate strength, yield stress, modules of elasticity and percent

- Test each sample of anchorage devices to verify that they conform to the special provisions

- Continuously inspect placement of all tendons and ntegrity of the protective wrapping. - Continuously inspect stressing and grouting of prestressed concrete. Measure elongation for each tendon and the jacking

- During the taking of test specimens and continuously during the placement of all reinforced concrete - Sample concrete: ASTM C172, except slump shall comply with

ASTM C94 - Test slump: ASTM C143, one test at point of truck discharge for 100 CY or fraction thereof for each type of concrete: additional tests required when concrete consistency seems to have changed

- Test air content: ASTM C173, volumetric method for lightweight or normal weight concrete; ASTM C231 pressure for normal weight concrete one for each 100 CY placed or fraction thereof for each type of air entrained concrete.ONith

- Test concrete temperature: test hourly when air temperature is 50° F (4° C) and below, and when 85° F (27° C) and above: and each time a set of compression test specimens are made.

- Take compression test specimens: ASTM C31, take one set of 3 standard cylinders for each 100 CY of concrete or fraction thereof for each type of concrete taken each day. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.

Reinforcing steel

- Verify that mill certicates show reinforcing steel in compliance with special provisions. - Periodically inspect the placement of reinforcing steel for concrete.

Bolts installed in concrete

- Periodically inspect installation of bolts and continuously inspect placement of concrete around such bolts

Bridge inspector

The Bridge Inspector shall be a qualified person who shall demonstrate his competence for inspecting bridge structures to the satisfaction of the Building Official and Biggs Cardosa Associates, Inc.

Duties and Responsibilities of the Bridge inspector

- The Bridge Inspector shall observe the work assigned for conformance with the applicable project drawings and specifications.

- The Bridge Inspector shall furnish inspection reports to the Owner or Owner's designated representative, the Resident Engineer, the Structural Engineer of record, the Contractor and other persons designated by the Owner or Owner's designated representative. All discrepancies shall be brought to the immediate attention of the Contractor for correction and, if uncorrected, to the proper design authority and to the Owner.

 The Bridge Inspector shall submit a final signed report stating whether the work requiring bridge inspection was to the best of the inspector's knowledge in conformance with the project plans and specifications and the applicable workmanship provisions of the Standard Specifications.

12/23/03 2/35/03 DATE DOS/ S INC B A S \mathcal{O} \bigcirc 8 $\overline{}$ \triangleleft \bigcirc

NO CHANGES

RECORD DRAWING

SHEETS DRAWING NO. 2002300-14

SHEET NUMBER

As Built 3/28/on

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